

BALSAM-WOOL

NU-WOOD

A Catalogue of HEAT INSULATING
•
SOUND DEADENING and
•
ACOUSTICAL TREATMENTS
•
for buildings

LOCAL REPRESENTATIVE



WOOD CONVERSION COMPANY • A Weyerhaeuser Industry
Cloquet, Minnesota

WOOD CONVERSION COMPANY



**Manufacturers of the Balsam-Wool and
Nu-Wood lines of Insulating Materials
for the Control of Heat, Cold and Sound**

Mills and General Offices at Cloquet, Minnesota

DISTRICT SALES OFFICES

NEW YORK, N. Y.	3107 Chanin Building
DETROIT, MICH.	515 Stephenson Building
CHICAGO, ILL.	360 No. Michigan Avenue
KANSAS CITY, MO.	231 W. 47th Street
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RETAIL DISTRIBUTION BY LUMBER DEALERS EVERYWHERE

BUILDING PRODUCTS

Balsam-Wool Standard Insulation

for preventing heat losses through walls, roofs, floors and ceilings; for insulating commercial and domestic refrigerators, etc., and for the sound deadening of floors and walls.

Balsam-Wool Quietile and Balsam-Wool Acoustical Blanket

for acoustical treatment in offices, banks, auditoriums, theatres, churches, hospitals, schools, broadcasting studios, etc.

Nu-Wood Insulating Board

Nu-Wood Insulating Lath

Nu-Wood Roof Deck Insulation

Nu-Wood Bevel-Lap Tile

for decorative and acoustical treatment in auditoriums, theatres, churches, etc.

INDUSTRIAL PRODUCTS

Balsam-Wool Refrigerator Car Insulation

Balsam-Wool Steel Passenger Car Insulation

Balsam-Wool Airplane Insulation

Balsam-Wool Sealed Slabs

for insulation of mechanical refrigerators.

All products of Weyerhaeuser, world's largest manufacturers of home-building materials. The organization which has pioneered almost every important improvement in lumber manufacture, in scientific logging, in forest conservation and utilization. Owner and operator of 20 lumber mills, 4 central distributing plants, 923 miles of standard gage railroad, 4 steamships for lumber transportation to Eastern markets. Lumber products include Weyer-



haeuser 4-Square Lumber, Weyerhaeuser Standard Lumber, Weyerhaeuser Laboratory Designed and Cut-to-size Crating, Weyerhaeuser Poles and Piling (see pages of Weyerhaeuser Sales Company in this issue). Insulation products include Balsam-Wool and Nu-Wood. Pulp and Paper products include Book, Publication and Writing Papers, Kraft and special Converter Papers, Newsprint and Sodite Cellulose.

GENERAL INFORMATION ON BALSAM-WOOL

A Wood Product—Balsam-Wool is made from pure wood fibers in fleecy wool form, permanently matted together and treated chemically to resist fire. For building purposes it is furnished $\frac{1}{2}$ and 1 in. thick between two sheets of asphalt-coated, tough, creped kraft paper.

Highly Efficient as a Heat Insulator—In Balsam-Wool the natural heat resistance of the wood is multiplied many times by a rearrangement of the cellular wood fibers into a "wool" form which retards the circulation of air. The still air space in Balsam-Wool is approximately 92%, while its density in pounds per cubic foot is only 3.62. The fact that the paper liners of Balsam-Wool are not stitched or punctured in any way adds further to its heat, moisture and wind resisting qualities.

An Effective Sound Deadener—The ability of the wool to absorb sound, and the tendency of the paper covering to reflect sound waves, account for the remarkable efficiency of Balsam-Wool as a sound deadener.

Puncture-proof—The creped paper liners on standard Balsam-Wool are capable of 25% stretch rendering them virtually puncture-proof. By reason of this new, patented feature, Balsam-Wool is stronger, tougher, more flexible than ever before.

Waterproof—The film of asphalt which lines the paper coverings protects the wool from moisture, and at the same time keeps dampness out of the building.

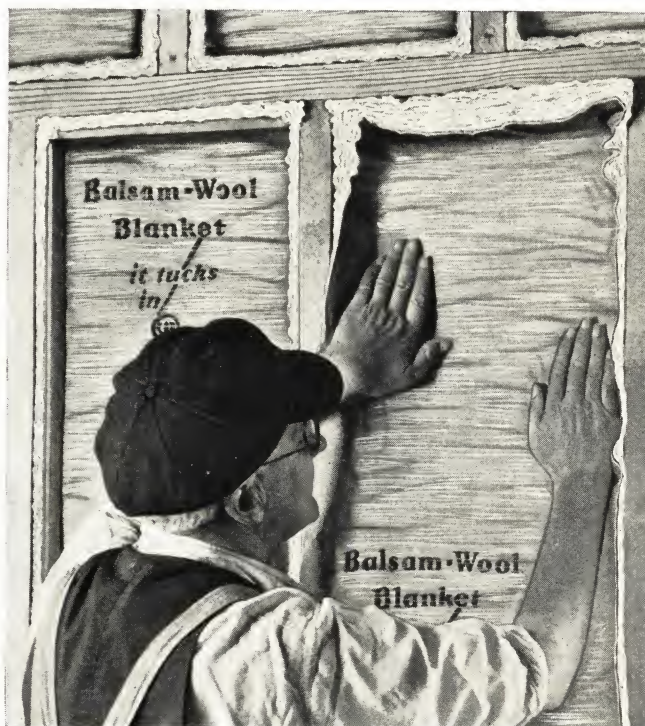
Fire Resistant—The wool is chemically treated against fire. It will char while exposed to flame, but will not smolder or burn after the flame is removed. Balsam-Wool in itself will not support combustion.

Verminproof and Sanitary—Balsam-Wool contains no animal matter. It does not attract or harbor rats, mice or vermin. It is clean, odorless and sanitary.

Permanent—The wool can not sift or settle because each fiber is coated with an adhesive which cements it

to adjoining fibers. The asphalt coating provides a permanent bond between wool and paper. Balsam-Wool is as permanent as the walls which hold it.

Uniform in Quality—During the process of manufacture, Balsam-Wool is under constant laboratory supervision for uniformity.



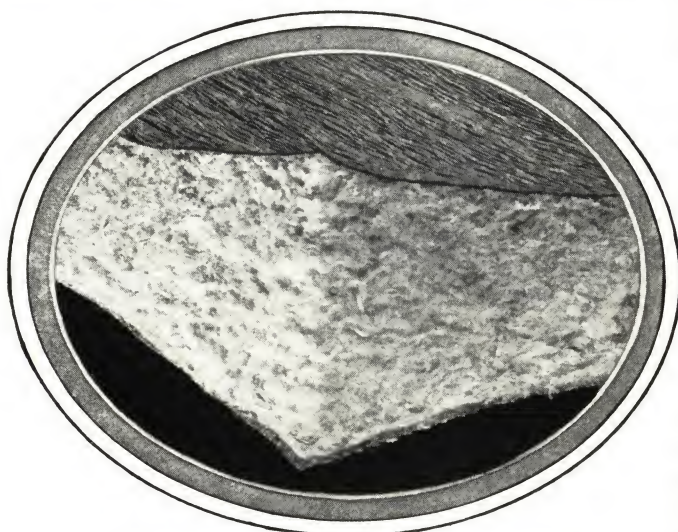
Simplicity of Balsam-Wool Application Is Well Illustrated Above

Low Cost of Installation—Three standard widths meet all average construction requirements. Thus, the carpenter cuts only to length. Being flexible, Balsam-Wool can be fitted easily into corners and around projections without waste of material. Being light and easily installed, it speeds up the work and keeps down installation costs.

Widths and Thicknesses—The standard widths are 17, 25 and 33 in. The standard thicknesses are $\frac{1}{2}$ and 1 in. The $\frac{1}{2}$ -in. thickness weighs 240 lb. per 1000 sq. ft., and the 1-in. thickness 370 lb. per 1000 sq. ft.

How Distributed—Balsam-Wool Standard Building Insulation is distributed through retail lumber dealers. Stocks are carried by dealers in all sections, and any retail lumber dealer can promptly obtain a supply.

A Weyerhaeuser Product—Balsam-Wool bears the name of an organization which for more than 70 years has been known for the high standard of quality maintained in all its products. On every roll of genuine Balsam-Wool will be found the Weyerhaeuser Forest Products trade-mark, the maker's pledge of personal responsibility.



Cross Section of Standard Balsam-Wool Blanket
This efficient insulator is 92% still air

HEAT TRANSMISSION COEFFICIENTS FOR THE CALCULATION OF RADIATION REQUIREMENTS AND FUEL SAVING

Radiation Reduction

Standard Practice—It is now a generally accepted practice to reduce the amount of radiation in a heat-insulated house as compared to one uninsulated. Both in laboratory tests and actual practice it has been proved beyond question of doubt that the house properly insulated with Balsam-Wool can be comfortably heated with 20% to 30% less radiation and a smaller boiler than the same house unprotected against loss of heat.

More Wall Space—Radiation reduction has another important advantage in the additional wall space it provides. Frequently the cutting off of a few coils from the radiator in the living room or bedrooms means just enough extra wall space to take care of an additional piece of furniture.

Test Data—To assist heating engineers and architects in figuring the radiation required for houses insulated with Balsam-Wool, coefficients for various types of wall, ceiling and roof sections are shown on the following pages. The value for Balsam-Wool used in computing these coefficients is the result of tests made by unbiased authorities and in accordance with standard testing methods. The results of these tests are shown in the table below.

TABLE I—TEST RESULTS

Hot Plate Method			
Material	Mean Temp.	Thermal conductivity per inch thick	Authority
Balsam-Wool	70°F.	.246	Peebles Bureau of Standards
Balsam-Wool	90°F.	.27	
Hot Box Method			
Description	Mean Temp.	Heat transmission Factor U	Authority
* ¾-in. Wood Lath and ¾-in. Plaster, ¾-in. fir sheathing, building paper, 4-in. lap siding, insulation "C," flanged midway in air space between studding..	40.2°F.	.115	Rowley
*Taken from Journal of A. S. H. & V. E., Vol. 34 No. 7 (July, 1928), Page 536. Insulation "C"—½-in. Balsam-Wool.			

B.t.u. Method of Calculation

General—It is generally conceded that the B.t.u. method of calculating radiation requirements is the best which has been developed to date because it takes into consideration the actual heat loss through the glass areas, walls, floors and roof as well as that due to infiltration. There is a loss of heat in each instance whenever a difference in temperature exists between the inside and outside of the room. The addition of Balsam-Wool to a wall, ceiling, or roof reduces the heat loss through that section by as much as 75%.

Glass, Walls, and Other Component Sections—

Each of these sections has a known coefficient of heat transmission which, when multiplied by its area and the temperature difference, gives the number of heat units lost each hour. The sum of these losses together with the heat necessary to raise the temperature of the incoming air to room temperature, divided by the number of heat units given off per hour per square foot of radiation, gives the amount of radiating surface required.

Infiltration—The losses through the glass, walls and other component sections of a room may be accurately estimated, but infiltration is dependent upon the tightness of the windows, doors, and their frames, the wind-proofness of the wall itself and the exposure to the prevailing winds. It is estimated that the air in a room changes from ½ to 3 times per hour, depending upon conditions. In most cases, it is good practice to assume the air changes in a room according to the number of walls exposed. Table III gives a schedule for rooms in connection with residences.

Method of Computation

To compute the amount of radiation required for any given space proceed as follows:

(1) Compute the loss through the windows and doors; i.e., area × coefficient × temperature difference = B.t.u. loss per hour. (Table II.)

(2) Compute the loss through the walls, floors and ceiling; i.e., area × coefficient × temperature difference = B.t.u. loss per hour. (Table V.)

(3) Compute the loss due to infiltration; i.e., volume × coefficient × temperature difference = B.t.u. loss per hour. (Table IV.)

(4) The sum of these losses divided by 150 for hot water or 240 for steam radiation gives the number of square feet of radiation required.

TABLE II—CONDUCTANCE COEFFICIENTS FOR WINDOW AND DOOR AREAS

C = B.t.u. per sq. ft. per hour per 1° F. temperature difference per thickness as applied.	
Glass, Single	1.10
Glass, Double	.55
Doors, Wood—2-in.	.38

TABLE III—NUMBER OF AIR CHANGES PER HOUR EXCLUSIVE OF VENTILATING EQUIPMENT

Basement Rooms	½-1
Rooms, one side exposed.....	1
Rooms, two sides exposed.....	1½
Rooms, three sides exposed.....	2
Garages	1-2
Entrance Halls	2-3
Bathrooms	2-3
Rooms with Fireplaces.....	2-3

TABLE IV—AIR COEFFICIENT

B.t.u. per cu. ft. per 1° F. temperature difference	
½ change per hour.....	.009
1 change per hour.....	.018
1½ changes per hour.....	.027
2 changes per hour.....	.036
3 changes per hour.....	.054

TABLE V. HEAT TRANSMISSION COEFFICIENTS FOR VARIOUS TYPES OF BUILDING CONSTRUCTION
 U = B.t.u. Transmitted per Hour per Sq. Ft. per Degree Difference in Air Temperature on Either Side of the Section

Section No.	TYPE OF CONSTRUCTION	Plas-tered direct	Furred wood lath & plaster	½" B-W single furring	½" B-W double furring	1" B-W single furring	1" B-W double furring
	Walls, Masonry						
1	9" Brick.....	.332	.209	.141	.116	.112	.096
2	13" Brick.....	.263	.179	.127	.107	.103	.089
3	18" Brick.....	.208	.152	.113	.097	.093	.082
4	6" Hollow Tile, Stucco.....	.299	.196	.135	.112	.108	.093
5	8" Hollow Tile, Stucco.....	.273	.184	.129	.108	.104	.090
6	12" Hollow Tile, Stucco.....	.193	.144	.108	.093	.090	.079
7	4" Brick Veneer, 4" H.T.....	.277	.186	.130	.109	.105	.091
8	4" Brick Veneer, 6" H.T.....	.246	.171	.122	.104	.100	.087
9	4" Brick Veneer, 8" H.T.....	.228	.162	.118	.100	.097	.084
10	4" Brick Veneer, 12" H.T.....	.169	.130	.100	.087	.084	.075
11	12" Stone.....	.415	.239	.154	.125	.120	.102
12	16" Stone.....	.356	.218	.145	.119	.114	.098
13	20" Stone.....	.311	.200	.136	.113	.109	.094
14	8" Concrete, Stucco.....	.437	.246	.157	.127	.121	.103
15	10" Concrete, Stucco.....	.395	.232	.151	.123	.118	.100
16	12" Concrete, Stucco.....	.361	.220	.146	.120	.115	.098
17	16" Concrete, Stucco.....	.308	.199	.136	.113	.109	.094
18	6" Cinder Concrete, Stucco.....	.403	.234	.152	.124	.119	.101
19	8" Cinder Concrete, Stucco.....	.348	.214	.143	.118	.113	.097
20	10" Cinder Concrete, Stucco.....	.307	.199	.136	.113	.109	.093
21	12" Cinder Concrete, Stucco.....	.274	.184	.129	.108	.104	.090
22	8" Concrete Block.....	.348	.215	.144	.119	.114	.097
23	10" Concrete Block.....	.305	.198	.136	.113	.108	.093
24	12" Concrete Block.....	.271	.183	.128	.108	.104	.090
	Walls, Frame	Not insulated		½" B-W		1" B-W	
25	Siding or Wood Shingles, Paper, Sheathing, Wood Lath and Plaster.....	.227		.122		.099	
26	Brick Veneer, Paper, Sheathing, Wood Lath and Plaster.....	.216		.118		.097	
27	Stucco, Paper, Sheathing, Wood Lath and Plaster.....	.257		.130		.105	
	Ceilings						
28	Wood Lath and Plaster, No Floor Above.....	.502		.172		.131	
29	Wood Lath and Plaster, 1" Pine Flooring Above.....	.234		.124		.101	
30	Wood Lath and Plaster, 1" Pine, 1½" Oak or Maple Flooring Above.....	.202		.114		.094	
	Partitions						
31	Studding, Wood Lath and Plaster One Side.....	.502		.172		.131	
32	Studding, Wood Lath and Plaster Both Sides.....	.251		.128		.104	
33	4" Hollow Tile, Plaster One Side.....	.31 *		.181**		.135**	
	Roofs						
34	Built-up Roofing on 1" Roof Boards, Wood Lath and Plaster Inside.....	.258		.130		.105	
35	Same as 34, with 2" Roof Boards.....	.213		.117		.097	
36	Wood Shingles on Roof Boards, No Inside Finish.....	.483		.170		.129	
37	Same as 36, Wood Lath and Plaster Inside.....	.246		.127		.103	
38	Asphalt or Asbestos Shingles on Roof Boards, No Inside Finish.....	.515		.174		.131	
39	Same as 38, Wood Lath and Plaster Inside.....	.259		.130		.105	
40	Slate or Tile on Roof Boards, No Inside Finish.....	.549		.177		.134	
41	Same as 40, Wood Lath and Plaster Inside.....	.262		.131		.105	
	†Roof & Ceiling Combined—Use Ceiling Area						
42	Wood Shingles, Wood Lath and Plaster Ceiling, No Attic Floor.....	.289		.137		.110	
43	Same as 42, with Single Floor.....	.174		.105		.088	
44	Asphalt or Asbestos Shingles, Wood Lath and Plaster Ceiling, No Attic Floor.....	.297		.139		.111	
45	Same as 44, with Single Floor.....	.177		.106		.089	
46	Slate or Tile, Wood Lath and Plaster Ceiling, No Attic Floor.....	.305		.141		.112	
47	Same as 46, with Single Floor.....	.180		.107		.089	
	Floors						
48	1" Yellow Pine on Joists.....	.440		.164		.126	
49	1½" Maple or Oak Flooring on 1" Yellow Pine on Joists.....	.339		.148		.116	
50	Same as 49 with ¾" Matched Ceiling Boards Below.....	.270		.133		.107	
51	4" Concrete on 3" Cinder Concrete on Ground.....	.556					
52	Same as 51 with 1" Tile Flooring on Concrete.....	.526					
53	Same as 51 with 1" Pine on Wood Sleepers Imbedded in Concrete.....	.388					
54	Same as 53 with 1½" Oak or Maple Flooring.....	.308					

*Plastered Direct **One furring strip

†Figured on basis of one-half pitch roof; sufficiently accurate for roofs of one-quarter pitch or more.

GENERAL DATA ON THE APPLICATION OF BALSAM-WOOL

How to Obtain Greatest Efficiency

To obtain the greatest efficiency and maintain continuity there are certain parts of the construction in the walls and roof which need special conscientious care. The properly insulated structure is heat-tight throughout. Any break in the insulating blanket leaks heat, just as a hole in a pan leaks water. Every effective means should be employed to conserve fuel and at the same time maintain a uniform, comfortable, healthful temperature.

The specifications and details given on the following pages are for roof and sidewall construction. They have purposely been made as brief as possible to avoid confusion and complication. For that reason vital points where insulation should be used have not been included, the insertion of these additional specifications being left to the discretion of the architect. Special attention of the designer and supervising architect is called to the following vital points:

(1) Insulation should be applied between the floor joists against the beam filling or wall at the first story joist level.

(2) Always carry the wall insulation continuously through the floor thickness at the second and attic story joists—that is, be sure to insulate the outside walls between the heads of all joists.

(3) Be sure the insulation is tightly nailed at the roof plate (where the rafters join walls) and at the ridge. Great care should be taken here since, usually, it is difficult to reach and is often neglected, causing much heat loss.

(4) Window and door frames should be given special attention. Calk or pack with Balsam-Wool all open spaces accessible from the inside and wherever possible continue the wall insulation around the frames. In brick veneer construction with double hung windows, pulley pockets should be insulated on the outside by applying a strip of insulation over the sheathing and running around the frame.

(5) Pay special attention to insulation of all roof areas or decks over heated rooms, as in the case of sunrooms, and to floors of heated rooms which project out over open porches or other unheated areas.

Where to Insulate the Roof

In specifying insulation for homes there is sometimes a question as to where to put the insulation for the roof. If the attic space is to be used for living quarters it is always advisable to place the insulation on or between the roof rafters. If the attic is to be used for storage space only, place the insulation on the ceiling line. This reduces the number of cubic feet necessary to heat and requires the minimum amount of insulation.

For this reason, the standard specifications cover the application of the roof insulation placed in both the roof line and ceiling line. The location of the insulation is left entirely to the specification writer after determining the use to which the attic space is to be devoted.

Due to the fact that heat naturally rises, the greatest heat loss per square foot of surface is through the roof. In the summer most of the heat comes in the same way. For these reasons it is always advisable to use 1-in. thickness Balsam-Wool for roof insulation.

Condensation—In the northern climates where extreme low temperatures prevail, the problem of condensation of moisture under the roof boards will have a bearing on the placing of the insulation. Condensa-

tion difficulties are the result of warm, moisture-laden air coming in contact with extremely cold roof surfaces. While there are many factors which may affect a condensation problem, generally speaking, difficulties of this kind can be avoided by placing the insulation between the roof rafters or, if the insulation is placed in the attic floor, by providing ventilation openings in the attic to carry off the warm, moist air.

The Engineering Department of the WOOD CONVERSION COMPANY, Cloquet, Minnesota, will be glad to submit their recommendations on any specific condensation problem.

Added Insulation Is an Economy

Were insulation a luxury—were the cost prohibitive in the house of moderate cost, it would be logical to install it only in the most vital parts of a building. The cost of insulation is, however, well within the reach of all and will pay for itself many times over during the life of a house in fuel savings. Care and attention given to the insulation and sound deadening of certain rooms ordinarily overlooked add but little to the original cost of the house, but add much to the comfort and liveableness of the home.

Since insulation can only, in most instances, be installed during the construction of the building, insulation should be considered in the following places in addition to those where it is customarily installed.

Basement Ceiling—The basement is always at much lower temperature than the living portions of the house. This usually results in cold floors, draughts, and greater heat loss. Therefore, it is advisable to insulate the first story floor or the basement ceiling. This must include the underside of the stairway to the second story and the partition walls enclosing the basement stairs.

Bedroom Floors and Walls—General custom and hygienic rules dictate that we sleep in cold bedrooms. At night, when the bedroom heat is turned off and the windows opened, we immediately create over the first story the equivalent of an unheated attic space for a period of at least one-third of each day. During this period there is a large loss of heat from the first story ceiling to the second story. By insulating the bedroom floors the temperature of the first story can be maintained uniformly day and night with resulting fuel economy, in addition to which there is the satisfaction of finding all, except the sleeping rooms, warm and comfortable in the morning.

To carry this further and add to the economy and maintain an even temperature throughout the house it is well to insulate the inside partition walls surrounding bedrooms which are kept at low temperatures during the night. This will insure warm, cozy bathrooms and dressing rooms. It is suggested that the doors be weatherstripped to further insure absolute temperature control.

The insulating of floors and partitions will also serve to sound deaden them, which is always a desirable feature. For this reason it is also advisable to insulate bathroom partition walls and wrap the soil pipe.

SPECIFICATIONS AND DETAIL DRAWINGS FOR THE APPLICATION OF HEAT INSULATION

HEAT INSULATION SPECIFICATION NO. 1

Frame, Brick Veneer or Frame Stucco

Balsam-Wool Flanged Between Studdings, Rafters and Joists

Materials

Heat insulation shall be standard Balsam-Wool, manufactured by the WOOD CONVERSION COMPANY, Cloquet, Minnesota. The $\frac{1}{2}$ -in.* thickness shall be used for sidewalls and the 1-in thickness for top-floor ceiling or roof insulation. Widths shall be as specified hereinafter. (Stock widths are 17, 25, and 33 in.)

*Note: Additional thickness is advisable where the more expensive fuels are to be used.

Heat Insulation—General

Continuity of insulation shall be maintained. Where floors, ceilings or roofs are insulated, as well as outside walls, insulate walls thoroughly between joist and rafter ends.

Throughout, all joints shall be made airtight, especially at door and window openings.

Use full length strips of insulation. End joints, where necessary, shall be lapped and covered with lath, nailed through insulation to boarding or header.

Insulation strips shall in all cases run in the same direction as studding, joists and rafters.

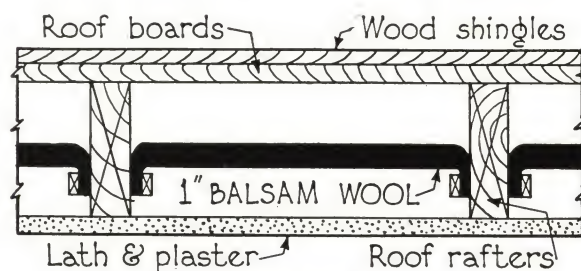
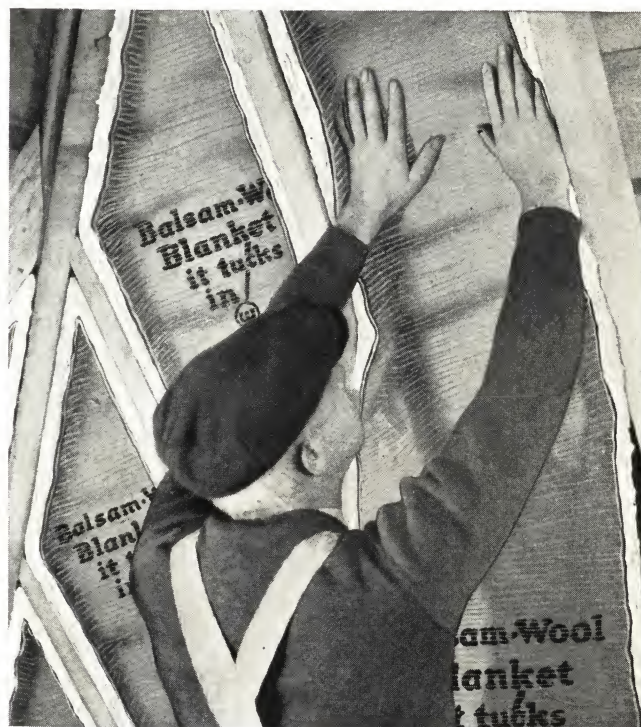
Sidewall Insulation (Detail No. 1)

Apply 17-in. width Balsam-Wool, vertically, between studding on all outside walls leaving an air space between sheathing and insulation. The flanges or turnouts shall be continuously fastened by means of lath or strips nailed securely through insulation to the studdings on the sides, and to sills, plates, or headers at top and bottom.

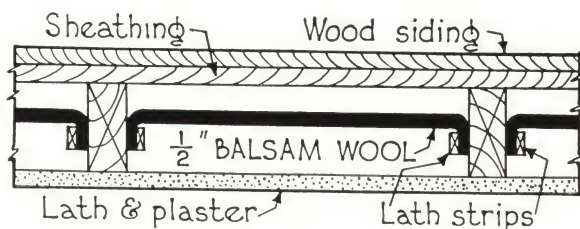
Roof or Ceiling Joist Insulation

(A) **Between Rafters (Detail No. 2)**—Apply 17-in. width Balsam-Wool between all rafters leaving an air space between roof boards and insulation. The flanges or turnouts shall be continuously fastened by means of lath or strips nailed securely through insulation to the sides of rafters, plates, ridges, etc.

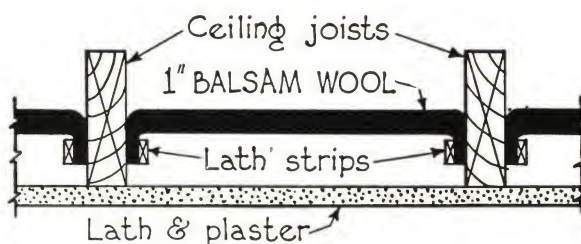
(B) **Between Ceiling Joists (Detail No. 3)**—Apply 17-in. width Balsam-Wool between all top floor ceiling joists. The flanges or turnouts shall be continuously fastened by means of lath or strips nailed through insulation to sides of joists, plates, headers, etc.



Detail No. 2



Detail No. 1



Detail No. 3

HEAT INSULATION SPECIFICATION NO. 2

Frame, Brick Veneer or Frame Stucco

Balsam-Wool Applied to Face of Studding, Rafters and Joists

Materials

Heat insulation shall be standard Balsam-Wool, manufactured by the WOOD CONVERSION COMPANY, Cloquet, Minnesota. The 1/2-in.* thickness shall be used for sidewalls and the 1-in. thickness for top-floor ceiling or roof insulation. Widths shall be as specified hereinafter. (Stock widths are 17, 25, and 33 in.)

*Note: Additional thickness is advisable where the more expensive fuels are to be used.

Heat Insulation—General

Continuity of insulation shall be maintained. Where floors, ceilings or roofs are insulated, as well as outside walls, insulate walls thoroughly between joist and rafter ends.

Throughout, all joints shall be made airtight, especially at door and window openings.

Use full length strips of insulation. End joints, where necessary, shall be lapped and covered with lath, nailed through insulation to boarding or header.

Insulation strips shall in all cases run in the same direction as studding, joists and rafters.

Sidewall Insulation (Detail No. 4)

Apply 33-in. width Balsam-Wool, vertically, on inside face of studding, edges butted together on every other stud. Fur over insulation with 1x2-in. furring strips on each stud to receive the lath and plaster.

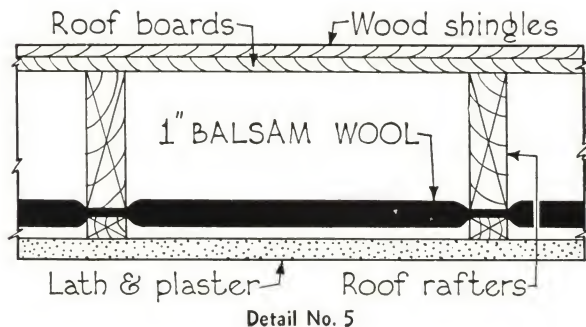
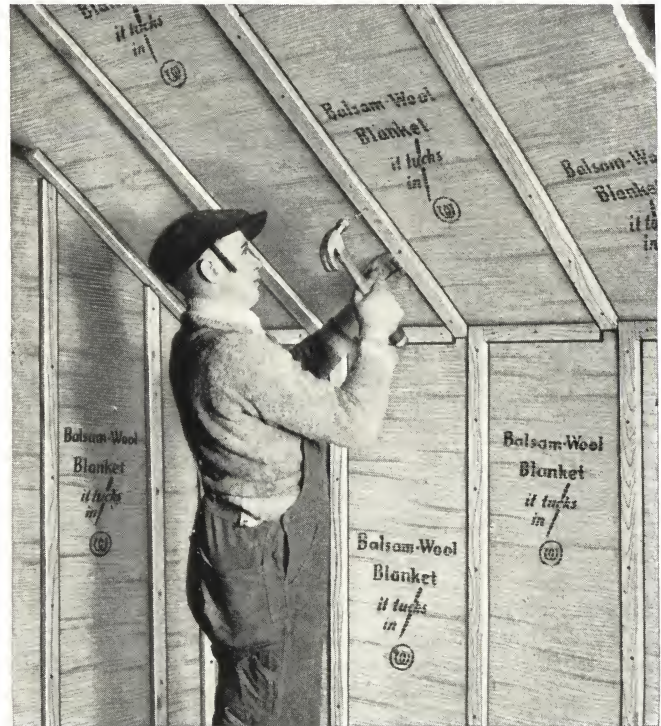
Where heating or plumbing pipes are installed in space between studs of outside walls insulate back of all such pipes with 17-in. Balsam-Wool flanged between studding, in addition to insulation as above.

Note: This method requires special width door and window frames.

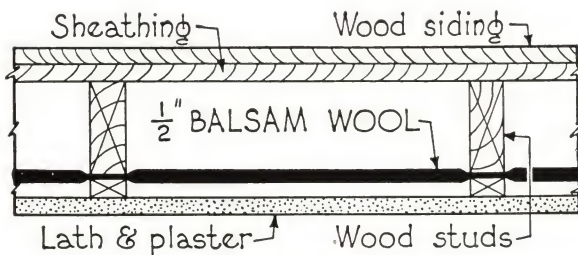
Roof or Ceiling Joist Insulation

(A) On Face of Rafters (Detail No. 5)—Apply 33-in. width Balsam-Wool on the inside face of rafters, edges butted together on every other rafter. Fur over insulation with 1x2-in. furring strips on each rafter to receive lath and plaster.

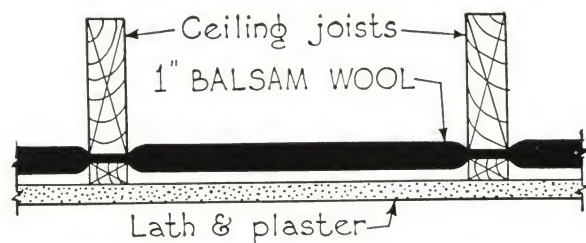
(B) On Ceiling Joists (Detail No. 6)—Apply 33-in. width Balsam-Wool on the bottom of top-floor ceiling joists, edges butted together on every other joist. Fur over insulation with 1x2-in. strips on each joist to receive lath and plaster for ceiling.



Detail No. 5



Detail No. 4



Detail No. 6

HEAT INSULATION SPECIFICATION NO. 3**Solid Brick, Hollow Tile, Stone, Concrete or Cinder Block Construction****Balsam-Wool Applied on Masonry Walls****Materials**

Heat insulation shall be standard Balsam-Wool, manufactured by the WOOD CONVERSION COMPANY, Cloquet, Minnesota. The ½-in.* thickness shall be used for sidewalls and the 1-in. thickness for top-floor ceiling or roof insulation. Widths shall be as specified hereinafter. (Stock widths are 17, 25, and 33 in.)

*Note: Additional thickness is advisable where the more expensive fuels are to be used.

Heat Insulation—General

Continuity of insulation shall be maintained. Where floors, ceilings or roofs are insulated, as well as outside walls, insulate walls thoroughly between joist and rafter ends.

Throughout, all joints shall be made airtight, especially at door and window openings.

Use full length strips of insulation. End joints, where necessary, shall be lapped and covered with lath, nailed through insulation to boarding or header.

Insulation strips shall in all cases run in the same direction as studding, joists and rafters.

Sidewall Insulation—Method A (Detail No. 7)

Fur the wall with 1x2-in. furring strips, 16-in. on centers shimmed plumb and true. Apply 33-in. width Balsam-Wool, vertically, on the inside face of furring, edges butted together on every other strip. Insulation strips shall in all cases run in same direction as furring strips. Fur over insulation with 1x2-in. furring strips on each wall strip, to receive lath and plaster.

Sidewall Insulation—Method B (Detail No. 8)

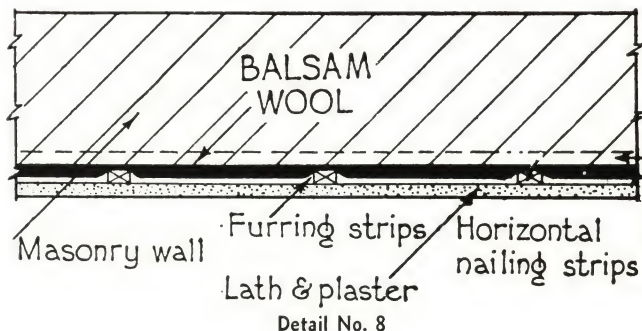
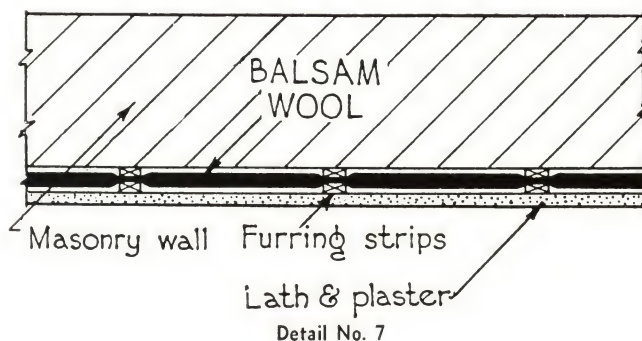
Instead of the usual nailing course of brick into which the furring strips are nailed, 1x2-in. furring strips shall be embedded into the masonry wall every 16 to 24 in., depending on size units used in constructing the wall. These strips should project not over ¼ in. from the surface of the wall. Plumb and true these strips to receive the insulation.

Apply 33-in. width Balsam-Wool, vertically, on the inside wall, edges butted together. Fur over insulation with 1x2-in. furring strips 16-in. on centers nailed through insulation to the horizontal furring strips in walls to receive lath and plaster. Vertical furring strips shall be so spaced as to cover joints in insulation.

Roof or Ceiling Joist Insulation

(A) **On Face of Rafters (Detail No. 5)**—Apply 33-in. width Balsam-Wool on the inside face of rafters, edges butted together on every other rafter. Fur over insulation with 1x2-in. furring strips on each rafter to receive lath and plaster.

(B) **On Ceiling Joists (Detail No. 6)**—Apply 33-in. width Balsam-Wool on the bottom of top-floor ceiling joists, edges butted together on every other joist. Fur over insulation with 1x2-in. strips on each joist to receive lath and plaster for ceiling.



SPECIFICATIONS AND DETAILED DRAWINGS FOR THE APPLICATION OF SOUND DEADENING

The Need for Sound Insulation—During the past few years the problem of sound deadening all types of buildings has received increased attention because of an insistence by the public for a greater degree of quiet.

The demand by renters of apartments for the privacy and comfort to which they are entitled, the necessity for quiet rooms in hospitals, hotels and offices, has led architects and engineers to seek a method to arrest the transmission of sound through walls and floors of such buildings.

Problem Confronting the Architect—The problem confronting an architect or engineer today is to build a

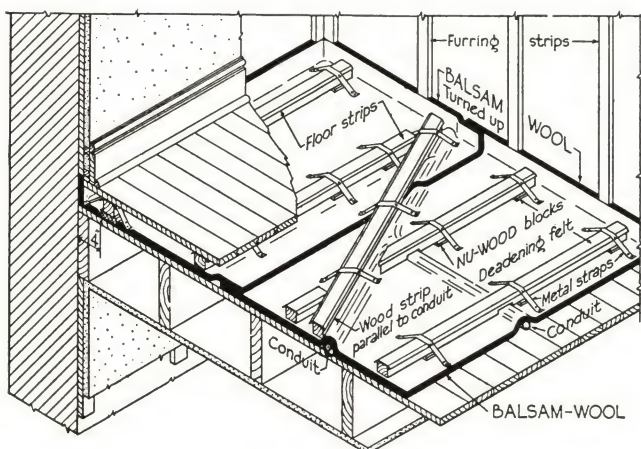
multiple dwelling so that a livable condition of privacy and quiet is assured the tenants without sacrificing space and without resorting to a massive, expensive type of construction and without interfering with standard practices. To do so means the careful selection of a sound insulating material, system, and supervision of the installation to insure the maximum results, for only by the proper materials correctly used are these conditions assured.

Architects and Engineers are urged to use the engineering and supervisory service maintained by the WOOD CONVERSION COMPANY in the solution of sound insulation problems.

BALSAM-WOOL FLOOR DEADENING TREATMENT

Years of experience in the manufacture and sale of Balsam-Wool for sound insulation in many types of multiple dwellings, combined with laboratory research, have resulted in the perfecting of a complete sound deadening treatment for floors which meets all requirements. This patented system is known as Balsam-Wool Floor Deadening Treatment and is composed of standard Balsam-Wool plus a system of eliminating all direct contact between finished floor and the sub-floor. Over the Balsam-Wool are placed squares of Nu-Wood Insulating Board placed 16 in. on center on which are laid, without nailing, 2x2-in. wood furring strips. On top of each furring strip is placed a 3-in. width strip of heavy deadening felt to which are attached metal straps 16 in. apart. These metal straps are then nailed to the sub-floor through Balsam-Wool insulation holding the furring strips rigidly to the floor. The finished flooring is then applied to the furring strips. The felt strips insulate the finished floor from the furring strips, which in turn are insulated from the sub-floor by the small squares of Nu-Wood and the layer of Balsam-Wool. The spanning of the furring strips from the small blocks of Nu-Wood reduces the compression of the sound insulation to only 2.4% of the total floor area, which in addition to the elimination of all wood to wood contact accounts for the efficiency of the system.

Packed in Units—Balsam-Wool Floor Deadening Treatment is packed in conveniently sized packages, two cartons comprising a unit and containing sufficient blocks, felt strips, and metal straps to apply 1000 sq. ft. of Balsam-Wool.



Detail No. 9

Detail showing application of Balsam-Wool Floor Deadening Treatment—Patent No. 1,745,171 (other patents pending)

Balsam-Wool Is the Correct Insulation—Probably the most important part of this patented system of sound insulation is the Balsam-Wool insulation which so admirably meets the exacting requirements of sound deadening. The asphalted, creped kraft paper liners present a hard surface to reflect sound waves, the thick "wool" blanket has proved a most efficient sound absorbing material. Thus sound waves coming in contact with the material are both reflected and absorbed.

Tests—Exhaustive tests by nationally known physicists who are recognized authorities in the testing of sound deadening methods are summarized as follows:

Test panel of floor section was made up following ordinary construction practices, consisting of 8-in. joists, ceiling of metal lath, a scratch and brown coat of gypsum plaster and white finish. Rough floor was laid on top of joists, over which was applied Balsam-Wool Floor Deadening Treatment. The finish floor was then applied.

RESULTS

Reduction Factor in Decibels at Frequency Bands

118-138	241-271	487-537	974-1074	1948-2148	3896-4296	Average
26	36	48	56	70	Over 80	52.8

Standard Specification Balsam-Wool Floor Deadening Treatment

Material—Sound deadening material (Insulation) shall be Standard Balsam-Wool ½ in. thick, 33 in. wide, applied in conjunction with Balsam-Wool Floor Deadening Treatment, manufactured by WOOD CONVERSION COMPANY, Cloquet, Minnesota.

Application (Detail No. 9)—Apply width of Balsam-Wool over sub-floor at one end of room, running at right angles to direction of finish flooring. Turn insulation up to plaster ground on side and ends. Place 2x2-in. furring strips 16 in. on centers over and parallel to insulation allowing approximately 4 in. between first strip and wall. Cover top of furring strip with deadening felt, with metal straps on top, fastening with small nails at several points along furring strip to hold felt in place. Place a Nu-Wood block under furring strip exactly below each metal strap, striking the furring strip a sound blow to imbed the block into Balsam-Wool. Nail metal straps to sub-floor using 1¼-in., 10-gauge barbed, large-headed, galvanized roofing nails, placing nails in holes nearest ends of strap. If first nails do not hold furring strip tightly, nail one or both of remaining holes.

Lay second width of Balsam-Wool overlapping first width 3 in. and turn up at walls to plaster ground. Continue as above until entire surface of sub-floor is completed. Lap all joints 3 in., thoroughly calk all pipe and conduit outlets with trimmings.

Note: If pipe or electric conduits are laid on sub-floor, apply Balsam-Wool over them. If pipe or conduits run under furring strips at right angles notch strips to receive conduits, making notch of sufficient size to prevent compression of Balsam-Wool over conduit. If conduit runs diagonally under furring strips run a furring strip parallel to conduit on one side as shown in detail, taking care that these strips do not come in contact with other furring strips.

Note: In Fireproof Construction beveled sleepers are imbedded into concrete. Balsam-Wool Floor Deadening Treatment is then applied with furring strips running at right angles to sleepers and metal straps nailed into sleepers.

SPECIFICATIONS AND DETAIL DRAWINGS FOR SOUND INSULATION OF PARTITIONS

Material

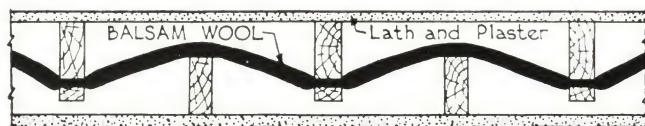
Sound deadening material (Insulation) shall be standard 1-in.* Balsam-Wool manufactured by WOOD CONVERSION COMPANY, Cloquet, Minnesota.

*While 1-inch is the recommended thickness, Balsam-Wool is also available in 1/2-in. thickness.

General

Continuity of the sound deadening material shall be maintained. Lap all joints at least 3 in. Tension on all strips shall be as nearly equal as possible. Use full length strips of insulation.

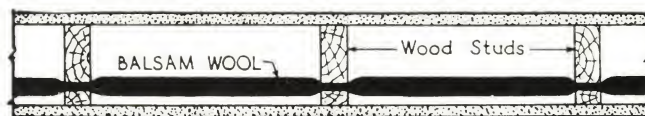
FRAME CONSTRUCTION



Detail No. 10



Detail No. 11



Detail No. 12

Application—Method A (Detail No. 10)

Wood Frame Partitions. All partitions where specified shall be built of staggered studding construction, each set of studding set 16 in. on centers, one set centering between the other. On the same side of the partition there shall be at least 1 in. from the face of one set of studding to the face of the other. Weave Balsam-Wool between the two sets of studding and secure it to the face of one set with lath or strips (or tin discs) nailed through insulation. End joints where necessary shall be lapped and nailed to studding.

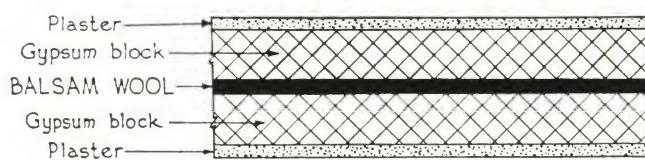
Application—Method B (Detail No. 11)

Wood Frame Partitions. Apply one layer of 33-in. width Balsam-Wool, vertically, on each of the two faces of studding, butting edges together on every other studding. End joints where necessary shall be butted and covered with lath nailed through insulation to stud or header. Fur over insulation with 1x2-in. furring strips to receive lath and plaster.

Application—Method C (Detail No. 12)

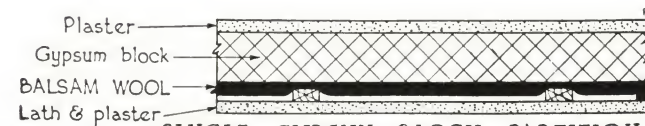
Wood Frame Partitions. Apply 33-in. width Balsam-Wool, vertically, on one face of partition studding, butting edges together on every other studding. End joints where necessary shall be butted and covered with lath nailed through insulation to stud or header. Fur over insulation with 1x2-in. furring strips over each stud to receive lath and plaster.

GYPSUM BLOCK CONSTRUCTION



DOUBLE GYPSUM BLOCK PARTITION

Detail No. 13



SINGLE GYPSUM BLOCK PARTITION

Detail No. 14

Application—Method D (Detail No. 13)

Double Gypsum Block Partitions. Erect one side of partition walls of gypsum blocks from floor to ceiling as elsewhere specified and directed. Apply 33-in. width Balsam-Wool, vertically, covering the entire surface of partition, lapping joints not less than 3 in. Nail to gypsum blocks with large headed nails. Particular care should be taken to bring Balsam-Wool to ceiling, floor and wall lines of partition. Then erect the other side of partition wall with inside face of gypsum blocks flush with surface of sound insulation.

Application—Method E (Detail No. 14)

Single Gypsum Block Partition Walls. Erect gypsum block partition as elsewhere specified and directed. Apply 33-in. width Balsam-Wool, vertically, covering the entire surface of partition, lapping joints not less than 3 in. Nail to gypsum blocks with large headed nails. Particular care should be taken to bring Balsam-Wool tightly to ceiling, floor and wall lines of partition. Apply 1x2-in. furring strips, vertically, 16 in. on centers, nailing through sound insulation to gypsum blocks. Furring strips shall be so placed that laps in sound insulation will come between them. All furring strips shall be plumb and true. Apply plaster base as specified to furring strips.

Note: If building code demands steel furring strips and metal lath, apply Balsam-Wool in the same manner and substitute specifications covering this particular construction.

BALSAM-WOOL ACOUSTICAL TREATMENTS

Balsam-Wool An Efficient Sound Absorbent

Early in the research of the WOOD CONVERSION COMPANY it became clear that there was a real need for a basic sound-absorbing material—one efficient in "soaking up" noise, readily adaptable to many different types of construction, low in cost per absorption unit applied.

Such a basic material was available in Balsam-Wool. Today, this basic sound absorbent material is available in the form of two commercial acoustical products, Balsam-Wool Quietile and Balsam-Wool Acoustical Blanket.

Balsam-Wool Quietile

A metal-covered acoustical tile formed by encasing a panel of Balsam-Wool mat or "wool" in a special screen wire. The open mesh of the screen covering leaves the Balsam-Wool free to absorb its maximum measure of sound, and at the same time provides the necessary strength and rigidity to make the completed tile a practical, easy-to-handle-and-apply material.

Efficiency—Tests conducted by the U. S. Bureau of Standards establish Balsam-Wool Quietile's position as a leader in absorbing quality at all practical ranges of sound. Compared at low sound frequencies, such as a man's voice, at medium frequencies, such as a woman's voice, or at high frequencies, such as the clatter of a typewriter, Balsam-Wool Quietile shows a consistently high absorption value.

REPORT OF TESTS ON BALSAM-WOOL QUIETILE MADE BY U. S. BUREAU OF STANDARDS

Frequency cycles per Sec.	128	256	512	1024	2048	4096
Pitch	C2	C3	C4	C5	C6	C7
Coefficient of sound absorption	0.12	0.24	0.62	0.76	0.76	0.83

Appearance and Light Reflection—Architects who have seen it declare Quietile has the most satisfactory surface, from the standpoint of appearance, of all sound absorbents. The screen covering gives the appearance of a flat surface and reflects light with a minimum of loss. Authorities state that a wall or ceiling surface should have a reflection factor of from .55 to .70 in order to provide satisfactory lighting conditions.

The following results of tests on an absolute type of Reflectometer are averages of many tests:

Material	Color	Reflection in Per Cent
Balsam-Wool Quietile	Blue White	62.3
Balsam-Wool Quietile	Blue White with Tan Stipple	60.2

Decoration and Cleaning—Standard colors for Balsam-Wool Quietile are cream and white. Special colors or stenciled tile can be supplied to meet any decorative specifications, or the tile can be stippled or otherwise decorated on the job. Unlike many acoustical treatments, Balsam-Wool Quietile may be washed, brushed, vacuum cleaned or repainted without reducing its sound absorption efficiency.

Ease of Application—Balsam-Wool Quietile is applied without nailing, without special stripping of ceiling or wall, without heavy fastening devices of metal or other material. *Balsam-Wool Quietile is simply glued into place with a special adhesive.*

Low Cost—Balsam-Wool Quietile per square foot will represent in most cases an economy in first cost over other methods and materials of comparable efficiency. *It offers a remarkably low cost per absorption unit.*

Specification

Materials—Sound absorbing (acoustical) material shall be standard Balsam-Wool Quietile, 1½ in. thick, 12x12-in. size tile, as manufactured by WOOD CONVERSION COMPANY, Cloquet, Minn.

Special adhesive to apply Quietile shall be furnished by WOOD CONVERSION COMPANY, Cloquet, Minn.



First National Bank's New Building, St. Paul, Minn.
Thousands of square feet of Balsam-Wool Quietile on ceilings keep banking rooms and offices quiet

Preparation—New Work—Areas to be treated shall have a finished coat of plaster or a putty coat of plaster brought to a true level plane.

Old Work—Surface of areas to be treated shall be clean, free from loose dirt or grit. Whitewash, calcimine and loose paint shall be removed sufficiently to obtain bond between Balsam-Wool Quietile and base beneath paint.

Application—Balsam-Wool Quietile shall be applied in strict accordance with recommended practice of manufacturer.

Balsam-Wool Acoustical Blanket

This is perhaps the simplest of all sound absorbents. One inch thick, paper covered on the reverse side and fabric covered on the face, it comes in rolls 34 in. wide. The base material is the same Balsam-Wool as used in Quietile.

Balsam-Wool Acoustical Blanket is applied with special adhesive or with large headed nails, covered with glazed chintz, burlap or monk's cloth, and the covering decorated with stain or paint.

Low in cost, Balsam-Wool Acoustical Blanket meets ideally the requirements for many acoustical problems where an effective yet less costly treatment than Quietile is desired. Approved by leading manufacturers of talking picture equipment, it has been used in the correction of acoustics in picture theatres the country over.

REPORT OF TESTS ON 1-INCH BALSAM-WOOL ACOUSTICAL BLANKET MADE BY U. S. BUREAU OF STANDARDS

Frequency cycles per Sec.	128	256	512	1024	2048
Pitch	C2	C3	C4	C5	C6
Coefficient of sound absorption	0.18	0.36	0.55	0.65	0.67

Specification

Material—Sound absorbing (acoustical) material shall be Balsam-Wool Acoustical Blanket, 1 in. thick, 34 in. wide as manufactured by WOOD CONVERSION COMPANY, Cloquet, Minn.

Preparation—Over all areas indicated or specified shall be applied 1½x2-in. wood furring strips, set accurately 3¼ in. from edge to edge.

Application—Between these furring strips shall be applied Balsam-Wool Acoustical Blanket, cloth side exposed, either nailed with large headed roofing nails or glued with approved grade of linoleum cement.

Finish—All panels to be finished with cloth as selected, stretched tightly and evenly and tacked to furring strips. Around edges of panels so formed apply moulded trim as specified.

Acoustical Advisory Service

The WOOD CONVERSION COMPANY maintains a staff of experts to assist in the solution of acoustical problems. Without charge or obligation this service is available to architects and engineers.

GENERAL INFORMATION ON NU-WOOD

Insulating Wall Board, Lath, Tile

Nu-Wood is a many-purpose product, made from the clean new fibers of northern coniferous trees. It is made in three forms—as Nu-Wood Insulating Board for use as wall board and decorative finish; as Nu-Wood Insulating Lath for use as plaster base; and as Nu-Wood Bevel-Lap Tile for decorative and acoustical treatments in buildings of all types.

The following Nu-Wood qualities apply alike to all three forms since the basic material in Nu-Wood Board, Lath, and Tile is the same:

Full Half-inch Thick—For almost every insulating purpose, *thickness* is an important consideration. Nu-Wood is uniformly a *full half-inch thick*. An important point to remember when specifying an insulating board.

Thermal Conductivity—Various nationally known laboratories have made tests to determine the conductivity of Nu-Wood. The following test conducted by Prof. J. C. Peebles of the Armour Institute of Technology expresses the average conductivity in B.t.u.'s per hour, per square foot of surface, per degree Fahrenheit of temperature difference for a one-inch thickness and for the actual thickness tested. Test conducted at a mean temperature of 72 degrees Fahrenheit.

Thickness Inches	Density Lbs. Cu. Ft.	Conductivity B.t.u. per hour	
		For 1" thick	For 0.509" thick
0.509	15.0	0.324	0.636

Extremely Rigid—Because of its thickness and its 3-way fiber construction Nu-Wood is extremely rigid.

Water Proofed—A special water proofing process is used in the manufacture of Nu-Wood as assurance against warping and to maintain its insulating efficiency under all conditions. Laboratory tests show that Nu-Wood has an extremely low absorption factor.

Bond With Plaster—Laboratory tests over a period of years show Nu-Wood Lath to be one of the most efficient plaster base materials on the market. The rough texture surface takes plaster easily and millions of fine fibers grip it in a perfect bond. Tests prove its bond greater than is ever necessary, resisting a pull of up to 1,526 lbs. per square foot. Even then the rupture occurs in the board itself rather than at the bonding point.

Appearance—Pleasing color and interesting texture combine to make Nu-Wood an exceptionally attractive finishing board. It may be left in its natural finish with either the rough side or the smooth side exposed, or it may be finished to suit the user's taste with ordinary paint, enamel, stain, calcimine, or the new plastic finishes. Because of the special sizing process Nu-Wood requires a minimum of paint.

Works Easily—In ease of working Nu-Wood resembles large, grainless panels of lumber, free of all defects. It saws and cuts easily and with smooth edges to any desired shape or size and nails without cracking.

GENERAL SPECIFICATION NO. 1

Nu-Wood Insulating Lath as Plaster Base for Outside and Partition Walls and Ceilings

Material

Plaster base shall be Nu-Wood Insulating Lath $\frac{1}{2}$ in. thick, 16x48 in. with "V" joint on 48-in. edges, as manufactured by WOOD CONVERSION COMPANY, Cloquet, Minnesota.

Framing

Frame studs, joists, sills and plates as in ordinary frame construction, all studs being placed accurately 12 or 16 ins. on center.

Application for Frame Construction

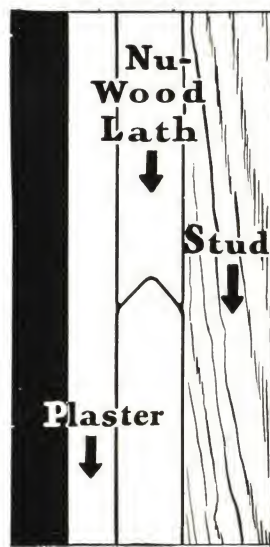
Apply Nu-Wood Lath rough side exposed at right angles to studding, joists or rafters. Apply lath to break joints, space $\frac{1}{4}$ in. apart at ends. Bring "V" joint to moderate contact and when cutting is necessary trim scant. Do not force boards into place.

Nailing—Nail Nu-Wood Lath with 4d coated or blued nails spaced 4 in. on centers.

Nail intermediate studs first, then the ends.

Reinforcing—Apply 6-in. strips of expanded metal lath at right angles to all

inside corners and standard corner beads to all exterior corners. Nail metal reinforcing through Nu-Wood to wood framing at intervals of 12 in.



"V" Joint

Makes Nu-Wood Lath self-aligning and self-locking, assuring a strong, smooth base for plaster

Application for Masonry Construction

Furring Strips—Wood furring strips 1x2 in. shall be applied vertically, secured in the usual manner to masonry walls placed 12 or 16 in. on centers. (Nu-Wood Lath may then be applied to furring strips as specified above.)

Plaster

Note: Do not wet Nu-Wood Lath before plastering.

Keep rooms well ventilated. Keep building dry. Screen windows if plastering during hot winds. In cold weather use artificial heat to dry plaster. Gypsum plaster containing not more than 2% lime shall be used. Apply plaster directly to surface of Nu-Wood. The total thickness of plaster shall be not less than $\frac{1}{2}$ in.

Note: Do not apply plastic paints to Nu-Wood Insulating Lath. For this type application use large size sheets applied according to Specification No. 3.

GENERAL SPECIFICATION NO. 2—Nu-Wood Insulating Board as an Interior Finish**Material**

All interior walls and ceilings shall be covered with Nu-Wood Insulating Board $\frac{1}{2}$ in. thick, as manufactured by WOOD CONVERSION COMPANY, Cloquet, Minn.

Framing

Frame studs, joists, sills and plates as in ordinary frame construction, all studs being placed accurately 16 in. on centers. Where horizontal joints in Nu-Wood are necessary use 2x4-in. headers cut in between studs.

Consideration shall be given for the design of the paneling desired, using extra studs and headers where necessary. Headers shall be provided back of chair rails or similar mouldings.

Application

Nu-Wood boards shall be applied directly to the framing members with (rough side) (smooth side) exposed, (Architect should make his selection of texture from samples as extremely interesting decorative effects may be secured by this choice of texture), allowing ample bearing surface for nailing on all edges. Horizontal joints shall only be made over headers previously installed.

Boards shall be placed $\frac{1}{4}$ in. apart at all edges and ends. Do not force boards into place. Nail in a 3-in. wide strip of Nu-Wood to build up back of all outside window and door casings.

Nailing

Beginning at the top, first nail to intermediate studs with $1\frac{1}{2}$ -in. finishing nails driven at a 30° angle every 6 in. Heads shall be countersunk with nail set. Then nail entirely around all edges and ends using 4d box nails, spacing them 3 in. apart and $\frac{3}{8}$ in. away from the edges of the boards.

Trim

Apply wood panel strips over joints and elsewhere as needed to secure the desired panel effect. Nail strips secure to framing, headers, etc., with 6d finishing nails set at a 30° angle.

Alternate Specification. Joints shall be covered with Nu-Wood panel strips $\frac{1}{2}$ x4 in. beveled at a 45° angle on each edge. For corners or angles, bevel one edge only. Do not bevel ends.

GENERAL SPECIFICATION NO. 3—Nu-Wood as Base for Plastic Paints**Material**

All interior walls and ceilings shall be covered with Nu-Wood Insulating Board $\frac{1}{2}$ in. thick in large size sheets (not Lath), as manufactured by WOOD CONVERSION COMPANY, Cloquet, Minnesota.

Framing

Follow framing specifications contained in General Specification No. 2.

Application of Nu-Wood

Follow application specifications contained in General

Specification No. 2, applying Nu-Wood with the smooth side of the board exposed.

Nailing

Follow nailing instructions contained in General Specification No. 2, then set all nail heads on intermediate studs with a ball head hammer.

Application of Plastic Paint

Plastic paint shall be applied in accordance with specifications and directions of manufacturer.

GENERAL SPECIFICATION NO. 4**Nu-Wood Roof Insulation Over Concrete, Gypsum, Wood and Steel Decks****Material**

Roof Insulation shall be Nu-Wood Roof Insulation $\frac{1}{2}$ in. thick, size 24x47 in., as manufactured by WOOD CONVERSION COMPANY, Cloquet, Minnesota.

Preparation of Wood Decks

The roof deck shall be swept clean before laying Nu-Wood. All nails shall be driven flush with boards. Deck must be dry and reasonably smooth.

Application—The first layer of Nu-Wood shall be nailed to wood deck with joints $\frac{1}{16}$ in. apart, using $1\frac{1}{2}$ -in. standard roofing nails with $\frac{3}{8}$ -in. heads. First nail center of sheets with nails 12 in. on centers and staggered, then nail edges and ends 12 in. on centers. Nails shall be driven flush with surface.

If more than one layer of Nu-Wood is to be used, mop the surface of the first layer with a uniform coating of not less than 30 lbs. of pitch or asphalt per 100 sq. ft. of surface, breaking all joints in relation to the first layer. Tamp, press or roll Nu-Wood firmly into the hot pitch or asphalt. Apply roofing in accordance with roofing specifications.

Note: If dressed and matched lumber is not used or if shrinkage has opened up joints sufficiently to allow hot pitch to run through joints in insulation and roof boards it is recommended that a layer of dry felt be applied over roof boards before insulation board is applied.

Preparation of Concrete and Gypsum Decks

The roof shall be reasonably smooth, dry and well cured. If not well cured, deck shall be primed with not less than one gallon of approved concrete primer per 100 sq. ft. of surface. Sweep deck clear of all rubbish.

Application—Mop deck thoroughly with hot pitch or asphalt using not less than 30 lbs. per 100 sq. ft. of surface. While pitch or asphalt is hot, tamp, press or roll Nu-Wood firmly into place. All edges of Nu-Wood shall be brought to moderate contact. Do not force boards into place. Transverse joints shall be broken. If more than one layer of Nu-Wood is to be applied, mop top surface of previous layer with a uniform coating of not less than 30 lbs. of pitch or asphalt per 100 sq. ft. of surface, breaking all joints in relation to the first layer.

Tamp, press or roll Nu-Wood firmly into the hot pitch or asphalt. Apply roofing in accordance with roofing specifications.

Preparation of Steel Decks

Decks shall be free from grease, oil, dirt and rubbish and the top surface properly coated with approved asphalt primer. All sharp angles shall be rounded out so as to avoid rough, sharp edges. Lay a strip of roofing felt 6 ins. wide without cement over expansion joints at ridge, cementing Nu-Wood over it.

Application—Apply Nu-Wood as specified above.



Scottish Rite Temple, Minneapolis, Minn.

Nu-Wood Tile, in variegated colors, applied over the entire vaulted ceiling greatly enhanced the appearance of the auditorium and completely remedied troublesome acoustical defects

NU-WOOD BEVEL-LAP TILE

For theaters, churches, schools, auditoriums, banks and offices—wherever the application of large areas of acoustical material is practical—Nu-Wood Bevel-Lap Tile is admirably suited to the combined use of interior decoration, insulation and acoustical treatment.

Sound Absorbing Efficiency

Tests by U. S. Bureau of Standards establish the following sound absorption coefficients for Nu-Wood Tile:

Frequency cycles per second	128	256	512	1024	2048	4096
Pitch	C2	C3	C4	C5	C6	C7
Coefficient of absorption						
½ in. thick.....	0.12	0.19	0.30	0.40	0.40	0.51
1 in. thick.....	0.14	0.19	0.37	0.37	0.41	0.56

Nu-Wood Tile used in these tests was applied directly to plastered surface. It has been found that if applied to furring strips a substantial increase in sound absorption efficiency will result.

Variegated Colors

In variegated colors, which are enough alike to blend harmoniously, yet with sufficient contrast to relieve the

monotony of a single tone wall, Nu-Wood Bevel-Lap Tile has won instant approval of architects and designers. Nu-Wood Tile can also be had in a single color, ready for any type of decorating treatment desired. Another unique feature is the choice between a rough and a smooth texture.

Improved Bevel-Lapped Joint

The improved bevel-lap, which is a feature of this new product, makes a perfect bevel edge tile that will not show plaster or light through the joints. Easily and quickly applied by nailing or with a special adhesive, Nu-Wood Tile permits a varied and artistic interior decoration at remarkably low cost.

Sizes

Nu-Wood Bevel-Lap Tile, a full half-inch thick, is available in the following sizes: 6x12, 12x12, 8x16, 16x16, 24x24, 16x32, 16x48, 24x32, and 24x48 in. Other sizes may be obtained on special order.

SPECIFICATIONS

Material

Sound absorbing (acoustical) material shall be Nu-Wood Bevel-Lap Tile in [here insert selection of sizes, texture (rough or smooth side exposed) and color (uniform or variegated)] as manufactured by WOOD CONVERSION COMPANY, Cloquet, Minnesota.

Adhesive

Special adhesive to apply Nu-Wood Bevel-Lap Tile shall be furnished by WOOD CONVERSION COMPANY, Cloquet, Minnesota.

Preparation

New Work—Areas to be treated shall have a finish coat of

plaster or a putty coat of plaster brought to a true level plane. (If Nu-Wood Bevel-Lap Tile is to be applied on wood nailing strips, strips shall be 12 in. on centers or in accordance with the design.)

Old Work—Surface of areas to be treated shall be clean, free from loose dirt or grit. Whitewash, calcimine and loose paint shall be removed sufficiently to obtain bond between tile and base beneath paint.

Application

Nu-Wood Bevel-Lap Tile shall be applied in strict accordance with recommended practice of manufacturer.

BALSAM-WOOL

NU-WOOD

A Catalogue of HEAT INSULATING
•
SOUND DEADENING and
•
ACOUSTICAL TREATMENTS
•
for buildings

LOCAL REPRESENTATIVE



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